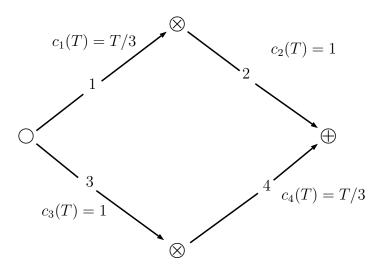
## Game Theory

## P. v. Mouche

## Exercise set 4

 $\mathbf{Exercise} \ \mathbf{1} \ \ \textit{Consider the following traffic network with two commuters}.$ 



- a. Identify for each commuter the strategies.
- b. Represent this game as a bimatrix game.
- c. Determine the Nash equilibria.

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Short solutions.

b. 
$$\begin{pmatrix} 5/3; 5/3 & 4/3; 4/3 \\ 4/3; 4/3 & 5/3; 5/3 \end{pmatrix}$$
.

Solution 1 a. Strategy 1 is route choice  $\{1,2\}$ . strategy 2 is route choice  $\{3,4\}$  b.  $\begin{pmatrix} 5/3;5/3 & 4/3;4/3 \\ 4/3;4/3 & 5/3;5/3 \end{pmatrix}$ . c. This game has two Nash equilibria: (1,2) and (2,1). In each Nash equilibrium each player has costs 4/3.